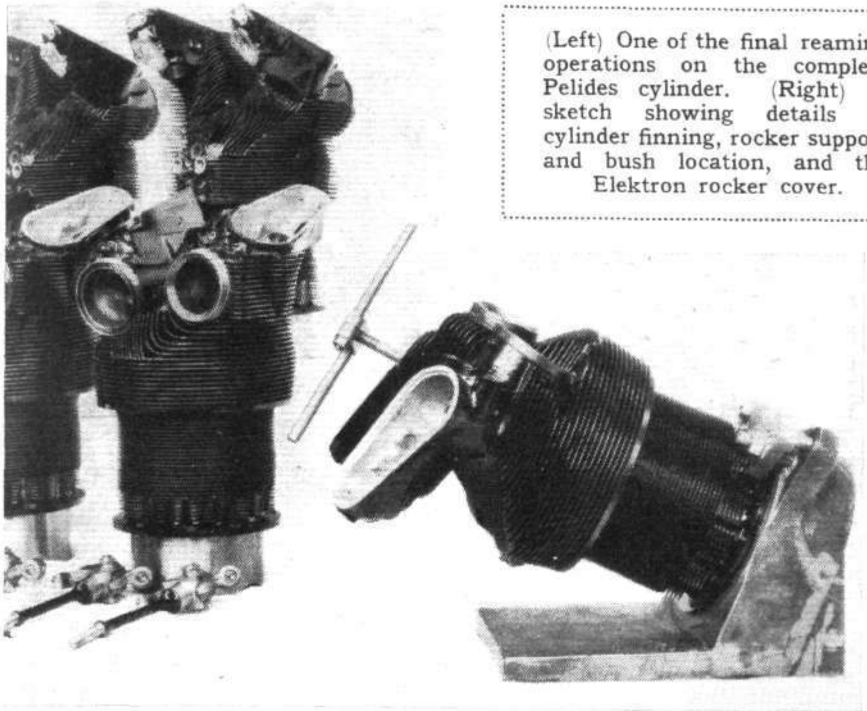
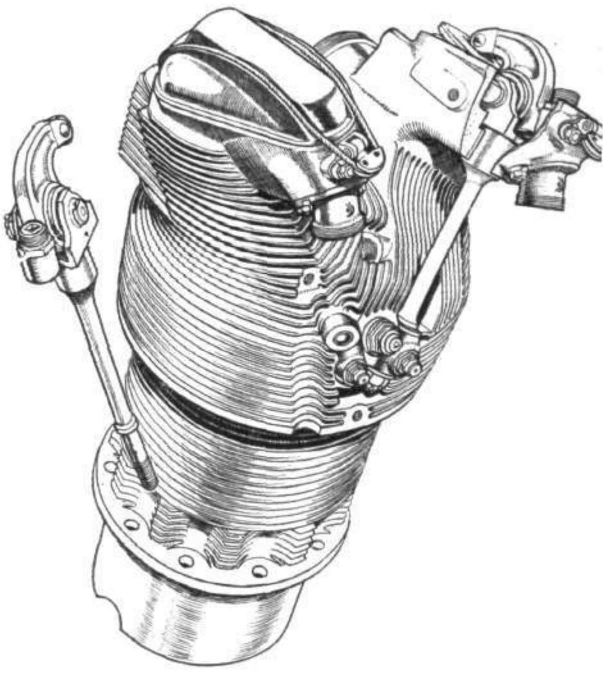




(Left) One of the final reaming operations on the complete Pelides cylinder. (Right) A sketch showing details of cylinder finning, rocker support and bush location, and the Elektron rocker cover.

studs have a smaller nut for a given thread than British ones; as small a point as this has necessitated several changes. All the main engine dimensions have been kept in millimetres, but threads are now B.S.F. except for studs into the softer alloys, which are Whitworth.

The redesign of the Farman reduction gear to carry a standard size British De Havilland v.p. airscrew and its control oil seals has also changed the frontal appearance of the engine, and the complete alteration of the rear cover to drive and house the British accessories has changed this aspect beyond recognition.

In the place of a separate induction pipe to each cylinder with a swelling for the interposed flame trap, a forked pipe is fitted, feeding one back and one front row cylinder. Provision is made for one Amal flame trap to be fitted at each junction should it be found to be the best position.

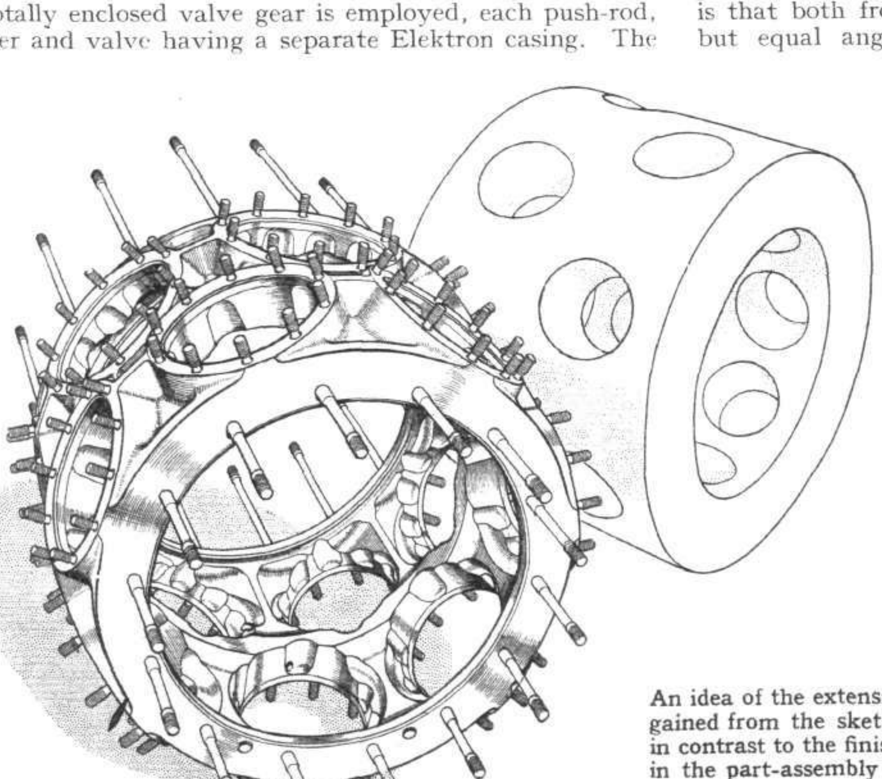
With a view to simplying production the cylinder heads of the Pelides and Alcides engines are interchangeable, the bore of both engines being 145 mm. The heads are modified and of the latest heavily finned design.

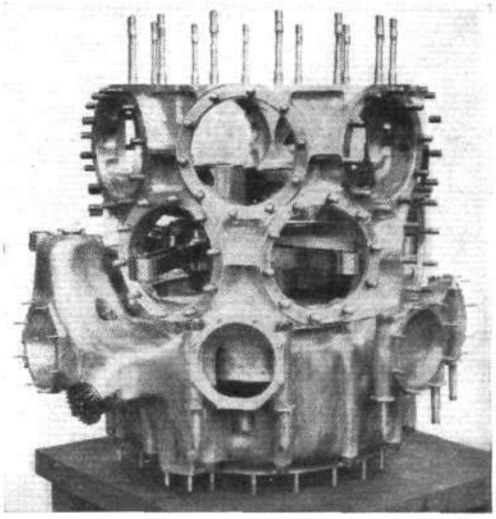
Totally enclosed valve gear is employed, each push-rod, rocker and valve having a separate Elektron casing. The rockers have tapered roller bearings and compensation for expansion. Oiling is automatic by pressure feed and there can be no loss from the casing. The small feed pipes to the bottom of the drilled rocker support may be seen in the front views of the engine, and also a separate nipple which is provided for hand lubrication as an added safeguard when starting from cold.

The single stellited exhaust valve of each cylinder is large and sodium-filled, and the stem end is capped, the inlet valve, however, is plain and the stem end is stellited instead of being capped. Both have triple concentric coil springs. The valve guides are of drawn phosphor bronze and the seats are austenitic steel inserts.

The Cam Gear

Hollow push-rods with spherical ends operate the valves, and at the lower extremity rollers run on the cam ring. This is driven off the front end of the crankshaft by a layshaft which runs on ball bearings and lay-wheels which provide both reduction and drive. An interesting point is that both front and rear row push-rods make opposite but equal angles with the cam profile; this "split"





An idea of the extensive machining necessary on a crankcase can be gained from the sketch of the original alloy forging (above) shown in contrast to the finished article (left). The crankcase is seen again in the part-assembly photograph (right), with the small oil sump on the left side of the volute casing.